

REMARKS

Claims 1, 5, 14, 16 and 30-32 are pending.

Claims 1 and 32 have been amended. Namely, the inert protective layer on the metal layer surface (claims 1 and 32) is now defined as being formed with "a chemical treating liquor containing chromic acid and phosphoric acid", based on the description on page 10, lines 9-11, of the original English specification and of Examples given therein (pages 20 – 23 thereof). Also, the polyolefin for the adhesive resin is defined as having been modified by "a grafting reaction with maleic anhydride", based on the description in the original English specification from line 21 on page 11 to line 2 on page 12 and at line 16 on page 13 as well as the description of the Examples.

No new matter has been added by way of the above-amendment.

I. Prior Art Based Issues

The following prior art based rejections are pending:

- (A) Claims 1, 5, 8-9, 14, 16, 25-26 and 30-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Daio et al. 5,156,930 (hereinafter "Daio") in view of Araki et al., WO 97/21779 (the Examiner relies on Araki et al. US Pregrant Publication 2003/0194564 as an English translation);
- (B) Claims 1, 5, 8-9, 14, 16, 25-26 and 30-32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the European publication EP 895,296 (hereinafter "EP '296") in view of Araki et al.; and
- (C) Claims 1, 5, 8-9, 14, 16, 25-26 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the JP 11-086808 (hereinafter "JP '808") in view of Araki et al.

Applicants respectfully traverse Rejections (A), (B) and (C).

I-A. Amendment

While the Applicants do not concede the Examiner's recognition that the reference Araki et al can stand as a prior art to be regarded as a basis for "establishing a proper *prima facie* case of anticipation/obviousness", Applicants have further amended the claims. Namely, the inert protective layer on the metal layer surface (claims 1 and 32) is now defined as being formed with "a chemical treating liquor containing chromic acid and phosphoric acid." Also, the polyolefin for the adhesive resin is defined as having been modified by "a grafting reaction with maleic anhydride."

I-B. No Reasonable Expectation of Success in the Cited Prior Art

In response to the Office Action dated 12/10/2006, Applicants responded by amending the claims and by refuting the obviousness of the invention from the cited four prior art documents. The newly issued Office Action includes rejections based on the same prior art as that of the former Office Action and is based on the same rationale. While the Examiner denies Applicants' grounds for refuting obviousness of the present invention from combination of the cited prior art documents by stating that "the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art" (on page 13, paragraph 11 of the Office Action). The Examiner states further that "many uses statement by the Araki et al. reference is what substantiates the *prima facie* case of obviousness" (page 15, lines 4 – 5, paragraph 11 of the Office Action).

Applicants believe that obviousness analysis requires that the skilled artisan has a reasonable expectation of success. See MPEP 2143.02. In a proper obviousness analysis, it would be clear from the disclosure of the prior art that the inventive effect would be derived

from the same or, at least, a similar mechanism which can be recognized theoretically and unequivocally. That is, the inventive effect should be derived from the prior art disclosure theoretically. In the present case, if the present invention is assumed to be obvious for a skilled artisan from the teachings of Daio et al, EP'296 and JP'808 combined with the teachings of Araki et al, he has to conclude that the phenomenon of adhesion of a sulfonic acid group- or carbonic acid group-containing fluoroethylene resin layer onto a metal layer which has been subjected to a reaction of the metal surface with chromic acid or phosphoric acid (in Araki et al.) should naturally and unequivocally occur in the same manner as the adhesion of a maleic anhydride-modified polyolefin layer onto a metal layer covered with a reaction product layer formed by a reaction of the metal surface with chromic acid and phosphoric acid (in the present invention). In chemical industrial field, a person skilled in the art would not assume that the same adhesion-promoting effect as taught by Araki et al. must be brought about in laminating an art-different resin layer on a metal layer covered with a reaction product layer formed by a reaction of the metal surface with chromic acid and phosphoric acid. While the courts have adopted a more flexible teaching, suggestion or motivation (TSM) test in connection with the obviousness standard based on the *KSR v. Teleflex* case [*KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385 (2007)] which involved a mechanical device in a relatively predictable technological area, it remains true that, despite this altered standard, the courts recognize inventors face additional barriers in relatively unpredictable technological areas as noted in *Takeda v. Alphapharm*, 83 USPQ2d 1169 (Fed. Cir. 2007).

Thus, there must be present a theoretically deducible basis for recognizing obviousness. In many chemical processes, engineers in charge must carry out experiments, in order to verify pertinency of the presumed mechanism, since chemical processes are subject to unexpected results.

Therefore, a proper *prima facie* case of obviousness based on the teachings of Araki et al. should be supported by theoretically deduced grounds for the identical or, at least, similar mechanism of showing the inventive effect. The Examiner simply judges that obviousness can

only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art" (page 13, lines 7 - 10 of Office Action). The Examiner has not shown where there is any theoretically deduced ground for the mechanism of causing the inventive effects, i.e., the Examiner has not established that the combination of references would give a reasonable expectation of success to do that which is presently claimed.

I - C. Araki et al.

Araki et al. disclose an adhesive film of fluorine containing resin exhibiting superior adhesion onto, in particular, metals and glass. The Examiner rejects the present invention, because Araki et al. disclose a laminate article formed by laminating an adhesive resin layer onto a metal layer and therein are taught that a metal substrate may be subjected to a chemical conversion treatment with acid for enhancing adhesive property and that carboxyl group is suggested as a functional group for modifying an adhesive resin. The Examiner states that the Araki et al. reference includes a mention to "many uses" of the inventive product, which is what substantiates the *prima facie* case of obviousness (page 15, lines 5-6 of the Office Action). However, the word "many uses" does not mean universal applicability but does mean a utilization in a specific field and it is to be pointed out that it is clearly taught in Araki et al. that the adhesive resin to be used is a fluorine-containing ethylenic polymer having hydroxyl groups prepared by copolymerizing 0.05-30 mole % of fluorine-containing monomer(s) having hydroxyl group and 70-99.95 mole% of fluorine containing monomer(s). A polymer having fluorine atom is known in general to have less adherent property, though it exhibits excellent thermal stability, chemical resistance and resistance to moisture, as given in sections [0002] to [0005] of Araki et al. The invention of Araki et al. is aimed at the discovery of a new way to cause a fluorine-containing polymer to possess better adherent activity to materials, such as metals and glass. The solution of Araki et al. is based on the use of a fluorine-containing polymer having hydroxyl substituent groups.

In contrast thereto, the present invention was made for the purpose of providing a sealing means for sealing electrodes and/or an electrolyte of a battery to protect it from the external environment with durable reliability. The solution by the present invention is based on the use of a laminate composed of a layer of an adhesive resin of maleic anhydride-modified polyolefin; an inert protective layer of reaction product of the metal surface with chromic acid and phosphoric acid; and a metal layer. In the laminate of the present invention, an excellent sealing performance is realized by the adhesion of the adhesive resin layer onto the metal layer intermediated by the inert protective layer.

Due to the difference in the inventive purpose between Araki et al. and the present invention, the two are clearly distinguished from each other in the essential inventive features for constructing the invention and in the inventive effects, so that no motivation for rendering obvious the present invention from the teachings of Araki et al. for a person skilled in the art can be seen. Notwithstanding the Examiner's statement that Araki et al. mention to a carboxyl group as a functional group, it is to be pointed out that Araki et al. give a statement in section [0016] that "an adhesive comprising such a fluorine-containing polymer, in which a sulfonic acid group or carbonic acid group is introduced, has insufficient adhesive property to metal...". Araki et al. state in section [0077] that "as compared with a fluorine-containing polymer having other functional group, such as carboxyl or even a fluorine-containing ethylenic polymer having hydroxyl and prepared by copolymerizing a non-fluorine-containing monomer having hydroxyl, the fluorine-containing polymer of the present invention is excellent in thermal resistance ... and large adhesive force can be obtained". Thus, it is impossible for a person skilled in the art to find the present invention obvious from the teachings of Araki et al.

I - D. Daio

Daio teaches a special battery, in which a "valve means" composed of three-layer laminate of non adhesive resin layer/metal layer/adhesive resin layer is disposed on a "sealing plate". In Daio, no description of the function of "valve means" is disclosed. By thorough examination of Daio, this valve means does not have any relevance to the laminate for sealing electrolyte or protecting electrode according to the present invention composed of

metal layer/inert protective layer/adhesive resin layer.

The Examiner judges that the laminate, for sealing electrolyte or protecting electrode according to the present invention can be found obvious by a person skilled in the art from the teachings of Daio in combination with Araki et al. However, there is no theoretically deducible motivation for combining the teachings of Daio and of Araki et al. for a person skilled in the art to find the present invention obvious, as explained above, even disregarding the fact that Araki et al. teach a laminate which has nothing to do with the laminate according to the present invention.

I - E. EP '296

EP'296 teaches a battery casing of three-layer laminate, in which the laminate of a structure of metal layer/adhesive resin layer/resin layer is disclosed. This laminate structure does not correspond to that of the laminate according to the present invention, since the laminate according to the present invention has a structure of metal layer/inert protective layer/adhesive resin layer. The Examiner judges that the laminate of the present invention is obvious from EP'296 in combination with Araki et al. However, such a judgment is undue, since the EP'296 laminate is quite different from that of the present invention in structure, as given above, and Araki et al. teach a laminate quite irrelevant to the laminate of the present invention, as discussed in Section I-C above.

I - F. JP '808

JP'808 teaches a sealing bag for non-aqueous electrolyte battery, which bag is made of a laminate of a structure of metal layer/plastic resin layer which is different from that of the present invention as mentioned above. The Examiner judges that the laminate of the present invention would be found obvious by a person skilled in the art easily from JP'808 in combination with Araki et al. However, such a judgment is undue, since the JP'808 laminate is quite different from that of the present invention in the structure and Araki et al. teach a laminate quite irrelevant to the laminate of the present invention, as discussed in Section I-C above.

I - G. Conclusion

As discussed above, the Applicants believe that the present invention defined by the claims would not be obvious to a person skilled in the art. As such, withdrawal of Rejections (A)-(C) is respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Conclusion

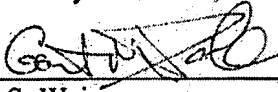
In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Esq., Reg. No. 43,575 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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